



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,141	08/20/2004	Koji Tsukuma	Q83134	1860
23373	7590	10/23/2006		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER VANOY, TIMOTHY C	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/505,141

Applicant(s)

TSUKUMA ET AL.

Examiner

Timothy C. Vanoy

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 8-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 and 8-12 is/are allowed.
- 6) ☒ Claim(s) 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

The new abstract submitted by the applicants with their amendment filed on Oct. 10, 2006 is objected to because it lacks a period after the word "voids" in line 6 of this abstract.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 6 is again rejected under 35 U.S.C. 102(b) as being anticipated by Japan Patent Document No. 2002-53,321 A (hence "JP-321").

The Derwent English abstract of JP-321 discloses lithium manganese oxide in the form of "grape clusters" of particles containing  $\text{LiMn}_2\text{O}_4$ . The particles have a diameter of 1 to 100 micrometers, and a specific surface area of 0.1 to 10  $\text{m}^2/\text{g}$ . The composition is form of primary and secondary particles.

The composition was made by mixing manganese dioxide with a water soluble lithium compound. The mixed solution was dried, and then heated at 500 to 900 °C to produce the composition.

The composition is used as an active material for a lithium secondary battery.

Claims 3, 4, 5, 8, 9 and 11 have not been rejected under either 35USC102 or 35USC103 because the limitations of these claims are not taught or suggested in either Japan Patent Document 2002-53,321 A or U. S. Patent 6,706,444 B1.

The 35USC102 rejection of claims 1, 2 and 12 over Japan Patent Document No. 2002-53,321 A has been withdrawn because the applicants have successfully shown that the average diameter of the primary particles is different. The average diameter of the applicants' primary particles ranges from 0.5 to 4.0 micrometers (please see applicants' claim 2) whereas the average diameter of the primary particles of Japan Patent Document No. 2002-53,321 A ranges from 0.1 to 0.2 micrometers (please see paragraph no. 0015 in the English translation of Japan Patent Document No. 2002-53,321). Since the average diameters of the primary particles drastically differ, it can **not** be assumed or concluded that the secondary particles resulting from the aggregation of the primary particles will **inherently** have the same open voids with the same average diameter or the same total volume that are set forth in applicants' claim 1. Different sized primary particles will inherently produce aggregates with different open voids having different diameters and different total volumes. Since it reasonably

Art Unit: 1754

expected that the secondary particles of the lithium manganese composite are different between the applicants' claims and Japan Patent Document No. 2002-53,321 A, then applicants' claim 12 is also patently distinct from Japan Patent Document No. 2002-53,321 A.

The 35USC102 rejection of claims 6, 7 and 10 over U. S. Patent 6,706,444 B1 to Numata et al. is withdrawn because the applicants have limited their claim 6 by requiring that the fine powder of manganese oxide and the fine powder of lithium carbonate have an average particle diameter of 1 micrometer or smaller, whereas col. 3 Ins. 12-28 in U. S. Patent 6,706,444 B1 reports a particle size of 5 to 30 micrometers for their manganese dioxide.

### ***Response to Arguments***

Applicant's arguments filed Oct. 10, 2006 have been fully considered but they are not persuasive.

a) *The applicants argue that their claim 6 requires the slurry to be spray-dried, whereas JP-321 does not include any spray drying of a slurry.*

Paragraph no. 0024 in the English translation of Japan Patent Document No. 2002-53,321 A expressly sets forth that the drying method used may be spray drying.

An English translation of Japan Patent Document No. 2002-53,321 A is enclosed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1754

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Timothy C Vanoy*  
Timothy C Vanoy  
Primary Examiner  
Art Unit 1754

tv